

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-16 are in this case. Claims 1-16 have been rejected under § 112, first paragraph. Claims 1-16 have also been rejected under § 102(e) or § 103(a). Independent claim 1 and dependent claims 2-4, 6-8, 10 and 11 have now been amended. New dependent claim 28 has been added. Dependent claims 5 and 9 have been canceled.

The claims before the Examiner are directed toward a method for forming an abrasive non-woven cloth by water entanglement techniques wherein the processing by water jets and subsequent drying inherent to water entanglement processes are used in synergy, respectively, to achieve embossing of the cloth and to cause thermoplastic fibers in the embossed surface of the cloth to undergo changes in physical morphology, thereby producing a cloth with abrasive properties.

Request for Continued Examination (RCE)

This response is being submitted together with a Request for Continued Examination and the corresponding fee. The Applicant therefore respectfully requests that the finality of the previous Official Action be withdrawn, that the attached amendments be entered, and that the amendments and arguments be given full consideration by the Examiner.

Priority

According to the Applicant's records, and from our review of the image file wrapper, we believe that the certified priority document was duly filed on June 30,

2006, a few days before the Examiner's last action was issued. We assume that the copy did not reach the Examiner in a timely manner

The Applicant would appreciate if the Examiner could inform the Applicant if for any reason he finds this matter not to be completely resolved.

**§ 112, First Paragraph Rejections**

The Examiner has rejected claims 1-16 under § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner has indicated that he does not find adequate support in the application as filed for the clause "processing the web so as to interlink the fibers . . ." in claim 1

In response, the Applicant respectfully submits that the verb interlink is a fair choice of term to refer to the various processes of linking fibers together, such as water entanglement, which are referred to in the specification, and does not constitute new matter beyond the scope of the specification.

Nevertheless, in order to expedite the prosecution, the Applicant has chosen to replace the terminology considered by the Examiner to be problematic. Specifically, claim 1 has now been amended to refer to processing the web by use of water jets to as to cause water entanglement of the fibers. This language is explicitly supported by the specification on page 11, lines 7-11

The Applicant believes that the amendment of the claims fully addresses the Examiner's rejections under § 112, first paragraph.

**§ 102(e) & § 103(a) Rejections**

The Examiner has rejected claims 1-11 and 14-16 under § 102(e) as being anticipated by Chen I (US 2004/0115431) or Chen II (US 2005/0136772). The

Examiner has also rejected claims 12 and 13 under § 103(a) as being unpatentable over Chen I or Chen II. The Examiner's rejections are respectfully traversed.

Both Chen references relate to forming of a non-woven abrasive material. As detailed in the Applicant's earlier response, the Chen references relate primarily to production of two-layer abrasive structures in which each layer is first formed separately and the layers are then combined. Although "spunbond" technology is referred to as an option for generating certain sub-elements, there is no mention of the possibility of incorporating an embossing process as part of the water entanglement process, nor of incorporating a heat-treatment process together with the drying stage of a water entanglement line.

In contrast, the present invention relates to a method for forming an abrasive non-woven cloth by water entanglement techniques wherein the processing by water jets and subsequent drying already inherent to water entanglement processes are used in synergy to generate the abrasive properties as part of the cloth production process. Specifically,

- The processing by water jets is effective to achieve embossing of the cloth;  
and
- The heating of the cloth is effective to cause thermoplastic fibers in the embossed surface of the cloth to undergo changes in physical morphology, thereby producing a cloth with abrasive properties.

Thus, the method of the present invention uses to advantage various processes which are inherently part of a conventional water entanglement non-woven cloth production line and, by suitable selection of the fiber web composition, addition of an embossing process and adjustment of heat treatment parameters, produces a cloth with

abrasive properties. The hardware required for implementing the method is essentially unmodified from the standard water entanglement production line equipment.

While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend independent claim 1 in order to clarify and emphasize the crucial distinctions between the method of the present invention and that of the Chen patents cited by the Examiner. Specifically, claim 1 has been amended to clarify that the web is processed by use of water jets so as: (i) to cause water entanglement of the fibers to form a cloth, and (ii) to generate a pattern of raised regions and lowered regions in said first surface. The claim has further been amended to clarify that the cloth is heated sufficiently. (i) to dry the water entangled cloth, and (ii) to cause at least part of said thermoplastic fibers to undergo changes in physical morphology, thereby imparting abrasive properties to at least said raised regions of said first surface.

The presence of a second layer of fibers, not essential to the novelty of the method as now claimed, has been removed from claim 1, and now appears in new dependent claim 28. Dependent claim 2 has been amended to depend from claim 28.

Dependent claims 3, 4, 10 and 11 have been amended to render them consistent with the amendment of independent claim 1, specifically, by replacing the word "patterning" by --processing--.

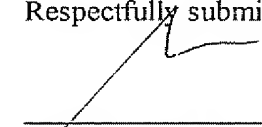
Dependent claims 5 and 9, rendered redundant by the amendment to claim 1, have not been canceled. Dependent claims 6-8 have been amended to render them dependent directly from claim 1.

Support for these amendments can be found throughout the specification, and specifically, on page 11, in lines 6-9 and 15-21, and on page 16, in lines 15-17.

Amended independent claim 1 now features language which makes it absolutely clear that the method of the present invention employs processing by water jets and subsequent drying inherent to water entanglement processes, respectively, to achieve embossing of the cloth and to cause thermoplastic fibers in the embossed surface of the cloth to undergo changes in physical morphology, thereby producing a cloth with abrasive properties. The Applicant believes that the amendment of the claims completely overcomes the Examiner's rejections of claim 1, and hence also dependent claims 2-4, 6-8 and 10-16, on § 102(e) and § 103(a) grounds.

In view of the above amendments and remarks it is respectfully submitted that independent claim 1, and hence also dependent claims 2-4, 6-8, 10-16, and 28, are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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